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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/667,717	09/22/2003	Ulrich Steegmuller	P2002,0783	9707

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EXAMINER
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LU, TONY W

ART UNIT	PAPER NUMBER
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2878

DATE MAILED: 04/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

4.2

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/667,717		STEEGMULLER ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Tony Lu		2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 January 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14, 16 and 18-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14, 16, 18-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/22/2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### DETAILED ACTION

This is in response to the amendment filed on 1/19/2006.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-14, 16 and 18-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zimmer et al US6873580 in view of Yanagawa et al US6346695.

With respect to claim 1, Zimmer et al disclose an optical sensing system for reading an optical data memory(52) comprising: a substrate(20) having a main surface extending along a first main plane; an edge-emitting laser component(30) for emitting laser radiation along an irradiation axis oriented essentially parallel to said first main plane, said edge-emitting laser component is configured on said main surface of said substrate; a deflection device(38, a mirror) is configured on said main surface of said substrate, wherein said deflection device is for deflecting the laser radiation emitted by said edge-emitting laser component in a direction essentially perpendicular to said main surface; at least one signal detector(40) for sensing the laser radiation reflected by the optical data memory; and an optical element(14) for guiding the laser radiation deflected by the deflection device to the optical data memory and for guiding the laser radiation reflected by the optical data memory to said at least one signal detector, wherein a supporting element(34,36) connecting said optical element to said substrate.

Zimmer et al lacks a clear teaching of whether or not at least one of said supporting element and/or said deflection device being produced from glass and being nondetectably connected to said substrate.

Yanagawa et al disclose an optical pickup system having a deflection device( 51, beam splitter) is made of glass(read col.10, lines 27-59).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Zimmer et al by making said deflection device from glass taught by Yanagawa et al in order to provide a deflection device of which its reflectance is not sensitive to humidity and/or temperature variation and ensure the proper operations of the system. Further citations regarding making the components of the system nondetachable would have been obvious to one of ordinary skill in the art in order to provide stronger formations and/or strong bonding and/or durable components of the system.

With respect to claim 2, per the above discussion, Zimmer et al disclose said deflection device also serves as a supporting element for connecting said optical element to said substrate(fig.1).

With respect to claim 3, per the above discussion, Zimmer et al disclose said at least one signal detector is an irradiation-direction signal detector(40) configured on said main surface of said substrate wherein said irradiation-direction signal detector is configured on said irradiation axis of said edge-emitting laser component and said irradiation-direction signal detector is configured downstream of said deflection device

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with respect to a direction of irradiation of the laser radiation emitted by said edge-emitting laser component.

With respect to claim 4, per the above discussion, Zimmer et al disclose the optical sensing system further comprising: with respect to said edge-emitting laser component, an opposite direction signal detector(42) configured on said main surface of said substrate and on said irradiation axis of said edge-emitting laser component, wherein said opposite-direction signal detector is configured in a direction opposite to a direction of the laser radiation emitted by said edge-emitting laser component.

With respect to claims 5,8 and 9, per the above discussion, Zimmer et al disclose wherein said supporting element is configured between said edge-emitting laser component and said opposite direction signal detector. The supporting elements(34,36) are positioned to prevent stray light of the edge-emitting laser component(30) from reaching/receiving by the at least one signal detector(40,42).

With respect to claims 6 and 7, per the above discussion, Zimmer et al disclose said supporting element has a surface facing said laser component, but fail to teach said surface of said supporting element has a metallic or dielectric mirrored layer.

Although Zimmer et al lack a clear teaching of said surface of said supporting element has a metallic or dielectric mirrored layer, using a metallic or dielectric mirrored layer in order to prevent unwanted light from passing said supporting element and avoiding the unwanted light from reaching said opposition-direction signal detector would have been obvious to one of ordinary skilled in the art.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Zimmer et al with an inclusion of a metallic or dielectric mirrored layer on said surface of said supporting element in order to prevent unwanted light from reaching said opposite-direction signal detector and ensure a more accurate and proper performance of the optical sensing system.

Further citations in claim 7 regarding said surface of said supporting element has an absorption layer would have been obvious for similar reasons set forth in the above discussion.

With respect to claim 10, per the above discussion, Zimmer et al disclose said at least one signal detector is formed on said substrate.

With respect to claim 11, per the above discussion, Zimmer et al fail to teach said at least one signal detector includes an array of PIN photodiodes formed in said substrate.

Although Zimmer et al lack a clear teaching of an array of PIN photodiodes formed in said substrate, selecting a specific type of photodiodes would have been obvious to one of ordinary skilled in order to provide a better detecting mean.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Zimmer et al with an inclusion of an array of PIN photodiodes in order to provide a fast response time and/or high sensitivity detecting mean for the optical sensing system.

With respect to claim 12, per the above discussion, note that Zimmer et al disclose two monitor detectors(90,92), integrated on the substrate, for controlling the intensity of said edge-emitting laser component.

Although Zimmer et al lack a clear teaching of said two monitor detectors are used for checking an irradiation power of said edge-emitting laser component, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Zimmer et al accordingly in order to provide a better adjustment of the intensity of said edge-emitting laser component by monitoring and/or checking the irradiation power of said edge-emitting laser component.

With respect to claim 13, per the above discussion, Zimmer et al disclose the optical sensing system further comprising: a plurality of detectors(40,42,90,92) said plurality of detectors including said at least one signal detector; a plurality of supporting elements(34,36); said deflection device embodied as a deflection mirror(col.2); said plurality of supporting elements are configured beside said deflection mirror; said plurality of detectors are configured between said deflection mirror and said plurality of supporting elements; said optical element mounted on said plurality of supporting elements(see fig.1).

With respect to claim 14, per the above discussion, Zimmer et al disclose said substrate is formed by a silicon substrate(col.2).

With respect to claim 16, per the above discussion, Zimmer et al disclose said main surface of said substrate has an area  $10\text{mm}^2$  or less(note that Zimmer et al disclose the H in fig.1 can be as little as 3.25mm, wherein according to the ratio, the

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length and width of 20 is calculated to be 4.50mm and 1.16mm respectively which yield an area of 5.22mm<sup>2</sup>.)

With respect to claims 18-24, per the above discussion, the proposed system of Zimmer et al and Yanagawa et al's optical sensing system inherently performs the claimed method 18-24 as the proposed system includes all the claimed limitations set forth above. Although Zimmer et al lack a clear inclusion of the specific manner of making/forming and/or installing components of the optical sensing system, selecting a specific manner material and/or size, shape of the components for providing similar expected performance of an optical sensing system would have been obvious to one of ordinary skill in the art. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Zimmer et al accordingly in order to provide more convenience in installation and/or mounting for components of the optical sensing system without altering the basic performance of the optical sensing system.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-14, 16 and 18-24 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP



§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony Lu whose telephone number is 5712728448. The examiner can normally be reached on M-F 9:00am- 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on 5712722328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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